

### Remarks

The Office Action mailed November 25, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-21 are now pending in this application, of which claims 3, 7, 8, and 14 have been amended.

The specification and claims have been amended to correct clerical errors in the application as filed, and to place the application in better form for examination.

Claims 1-21 are subject to an election requirement. It is asserted in the Office Action that the application contains claims directed to Species 1, namely an electrical connector tool for inserting an electrical connector by moving toward the circuit board; and Species 2, namely an electrical connector tool for removing an electrical connector tool by moving away from the circuit board. The Office Action therefore requires election between Species 1 and 2. In response, Applicants elect Species 1 with traverse for the reasons set forth below. Claims 1-21 and Figures 1-9 read on the elected Species 1.

Applicants respectfully submit that the present election of species requirement is improper. Nowhere in the present specification or claims are alternative embodiments of a connector tool described or claimed that are used solely to engage or disengage an electrical connector and a circuit board by moving the connector toward and away from a board. Rather, it is clear that Figures 1-9 and the present claims all relate to a tool that functions to engage *and* disengage an electrical connector and a circuit board. Each of the independent claims recite a connector movable *toward and away* from a circuit board. Thus, as the present invention accomplishes both functions and moves toward and away from a circuit board, the allegedly distinct Species 1 and 2 set forth in the Office Action having one function but not the other bears no relation to the invention as it is presented in the specification and claims.

The election requirement appears to be an attempt to separate the functions of the tool into distinct insertion and removal tools that do not, in fact, exist and that have been nowhere disclosed or claimed in the present application. Applicants note that the claims must be

considered in their entirety, (i.e., all the claimed recitations must be considered for examination purposes), and the claims cannot be properly be broken up in a piece meal fashion for examination purposes as the Office Action apparently purports to do. Thus, Applicants respectfully submit that the present election requirement overlooks clearly recited elements in the claims, and further the present election requirement is facially inconsistent with the language of the claims at issue and the supporting disclosure of the present application. Applicants accordingly request that the election requirement be reconsidered and withdrawn on substantive grounds.

Applicants also submit that the present election requirement is not procedurally proper as a sufficient showing of distinct species in support of the election requirement has not been established in the Office Action. The Office Action, contrary to usual practice, has not identified any figure as representing either of the alleged Species 1 and 2, omits any discussion of the actual claimed invention or potentially generic claims, and provides no explanation regarding why the alleged species are considered to be patentably distinct or how the alleged Species present a burden on the examiner to search and examine each of the alleged species. Because the Office Action fails to clearly identify the species in a manner consistent with the claimed invention, and also for failing to state any reason why the species are considered patentably distinct, it is respectfully submitted that the election requirement lacks a proper foundation under the applicable policies, procedures, and accepted patent practice. To the extent that the Office persists in asserting the election requirement, Applicants request clarification for the election requirement and another opportunity to respond once a proper requirement for election is established.

Regarding Applicants' election, it is respectfully submitted that because the tool described and claimed in the present application functions to move the connector both toward *and* away from the circuit board as discussed above, all the claims are generic to Species 1 and Species 2. That is, it is submitted that claims 1-21 and Figures 1-9 read on species 1 and that claims 1-21 and Figures 1-9 read on Species 2. As such, it is respectfully submitted that the election requirement serves no purpose and has no place in the subject prosecution. Nonetheless, as Applicants are now forced to choose one of the Species for prosecution, Applicants elect

Species 1, with traverse for the reasons set forth above. Claims 1-21 and Figures 1-9 read on the elected Species 1.

As a matter of courtesy to the Examiner, and in response to the request in the Office Action, Applicants reluctantly attach to this amendment a parts list of the reference numerals and corresponding features described in the specification, together with another listing of claims annotated with the reference numerals on the parts list. The parts list and annotated claims are provided for the Examiner's aid in understanding the subject matter of the application, but caution the Examiner not to unduly rely on such materials to examine the claims for at least two reasons.

First, Applicants want to make clear that the annotated claims reflect an exemplary application of the claim language to disclosure of the specification and drawings. While the annotated claims are now presented in a way that Applicants will believe to be most helpful to the Examiner to understand the inventive concepts, and further while Applicants believe that the annotated claims fully demonstrate that the invention is supported by the disclosure of the present application, the annotated claims are not intended to provide the only possible application of the claim language to the supporting disclosure. For example, Applicants have identified reference numerals corresponding to recitations such as "a first portion", "a second portion" and "an actuator." It is recognized that other potential reference numerals and features could also be identified that could fairly be considered "a first portion", "a second portion" and "an actuator" Reasonable minds may disagree on these terms and other terms found in the claims, and the claims therefore lend themselves to other possibilities that, as a practical matter, Applicants are unable to document in the annotated claims.

Second, the annotated claims are not intended to provide a proper claim construction for the Examiner's use in evaluating the claims, and Applicants in no way are bound by the annotated claims in construing the claims and responding to claim rejection and argument in the present prosecution or other proceedings. The request for reference numerals corresponding to the claimed language effectively imports exemplary embodiments of the specification into the claims, contrary to generally recognized and well established patent law that is improper to read details from the specification into the claims. While the specification discloses an exemplary

embodiment of a tool according to the present invention in relation to Figures 1-9, the claims are not limited solely to the illustrative embodiments in the specification and figures. That is, an undue focus on the parts list and annotated claims that reflect the exemplary embodiments and illustrative figures in the application would apparently lead to an unnecessarily narrow and inappropriate interpretation of the claims for examination purposes or other purposes. While Applicants encourage the Examiner to come to an understanding of the disclosed exemplary embodiments, the Examiner should be consciously aware that they represent mere exemplary implementations of the inventive concepts, and that other implementations or embodiments of a connector tool that are not expressly disclosed in the present specification and figures may be encompassed by the pending claims. Stated another way, the actual scope of the claims may be, and probably is, much broader than the annotated claims might otherwise suggest.

For the reasons set forth above, the illustrative embodiments reflected in the parts list and the annotated claims should not serve as the sole points of analysis in conducting a prior art search and/or evaluating the patentability of the claims, and the annotated claims are not considered to be a binding interpretation of the claims on behalf of Applicants or the Examiner during the prosecution of the prosecution of the present application.

Favorable action is respectfully solicited.

Respectfully submitted,



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TYCO 18060 (AT 20958-2113)

## ELECTRICAL CONNECTOR INSERTION AND REMOVAL TOOL

server system .....	100
insertion and removal tool .....	102
connector .....	104
motherboard .....	106
installation mechanism .....	108
extractor mechanism .....	110
motherboard top surfaces .....	112
motherboard lower surface .....	114
installation actuator knob .....	116
actuator knob axis .....	118
extraction actuator knob .....	120
actuator knob axis .....	122
positioning plate .....	124
guide tracks .....	126
grooves .....	128
alignment members .....	130
 support plates .....	 140, 142
front and rear faces .....	144, 146
alignment blocks .....	148, 150
lateral edges .....	151, 152
spacer blocks .....	154, 156
extractor block .....	158
channels .....	160, 162
rib or ridge .....	164
which receives a ridge .....	164
guide pins .....	166

## TYCO 18060 (AT 20958-2113)

pin leading edge .....	168
pint threaded portion .....	170
pin stop ring .....	172
pin spacer section .....	174
nut .....	176
alignment pins .....	180
extractor pins .....	182
actuator block .....	184
actuator element .....	186
vertical rib .....	200
support plates .....	220, 222
side edges .....	224
alignment blocks .....	226, 228
spacer blocks .....	230, 232
installation block .....	234
actuator block .....	236
channels .....	238, 240
ribs or ridges .....	242
channel .....	244
ribs or ridges .....	246
actuator element .....	250
bores .....	252
alignment members .....	254
alignment knobs .....	256
lock washers .....	258
fastener elements .....	260

## TYCO 18060 (AT 20958-2113)

mounting bores .....	262
mounting apertures .....	264
fastener elements .....	266
mounting bores .....	268
second threaded portion .....	280
connectors .....	300
pin field .....	302



TYCO 18060 (AT 20958-2113)

**ELECTRICAL CONNECTOR INSERTION AND  
REMOVAL TOOL**

**ANNOTATED CLAIMS**

1. A connector insertion and removal tool (102) for an electrical system (100) including a circuit board (106) and at least one electrical connector (104) therefor, said tool comprising:
  - a first portion (108 or 110) configured for coupling to a first surface (112 or 114) of the circuit board; and
  - a second portion (the other of 108 or 110) configured for coupling to said first portion;wherein at least one of said first portion and said second portion comprises an actuator (186 or 250) adapted for movement toward and away from said circuit board to contact at least a portion of said connector.
2. A tool in accordance with Claim 1 wherein each of said first portion (108) and said second portion (110) include an actuator (186, 250) adapted for movement toward and away from said circuit board to contact at least a portion of said connector.
3. A tool in accordance with Claim 1 wherein the circuit board includes an pin aperture field (302), said actuator comprising a plurality of extraction pins (182) corresponding to the pin aperture field.
4. A tool in accordance with Claim 1 further comprising at least one guide pin (166), said guide pin engaged to said first portion on one side of the circuit board and engaged to said second portion on the other side of the circuit board.



TYCO 18060 (AT 20958-2113)

5. A tool in accordance with Claim 4 wherein said at least one board guide pin (166) comprises a first end having a first threaded portion (170) and a second end having a second threaded portion (280), said first and second threaded portions different from one another.

6. A tool in accordance with Claim 1 further comprising nonconductive sections (154, 156 or 230, 232) situated adjacent said actuator (186) or (250), thereby avoiding a conductive path through said tool.

7. A tool in accordance with Claim 1 wherein said at least one of said first portion and said second portion comprises an alignment member (130 or 254) configured to position the electrical connector with respect to a pin aperture field (302) in the circuit board.

8. A tool in accordance with Claim 1 wherein said at least one of said first portion and said second portion comprises a plurality of modular blocks (148, 150, 154, 156, 158 or 226, 228, 230, 232, 236) mounted stationary thereto, and at least one movable block (158 or 236) configured to move toward and away from the circuit board.

9. A tool in accordance with Claim 1 wherein said at least one said first portion and said second portion comprises a positioning plate (124) configured for sliding engagement with a guide track (126).

10. A connector insertion and removal tool (102) for an electrical system (100) including a circuit board (106) and at least one electrical connector (104) therefor, said tool comprising:

a first portion (110) configured for coupling to a first surface (114) of the circuit board and comprising a first actuator (186), said first actuator movable toward said circuit board to disengage the connector from the circuit board, said first actuator movable away from said circuit board to permit engagement of the connector to the circuit board; and

TYCO 18060 (AT 20958-2113)

a second portion (108) configured for coupling to said first portion, said second portion extending over a second surface (112) of the circuit board opposite the first surface, said second portion comprising a second actuator (250), said second actuator movable toward said circuit board to engage the connector to the circuit board, and said actuator block movable away from said circuit board to permit disengagement of the connector from the circuit board.

11. (original) A tool in accordance with Claim 10 further comprising a guide pin (166) insertable through the circuit board, said first portion and said second portion engaged to said guide pin on opposite sides of the circuit board.

12. (original) A tool in accordance with Claim 11 wherein said first portion comprises a first alignment member (130) for engaging a first portion (280) of said guide pin, and said second portion comprising a second alignment member (254) for engaging a second portion (170) of said guide pin (166).

13. (original) A tool in accordance with Claim 10 wherein each of said first and second portion comprises modular blocks (148, 150, 154, 156, 158 or 226, 228, 230, 232, 236), at least some of said modular blocks (154, 156 and 230, 232) nonconductive.

14. (currently amended) A tool in accordance with Claim 10, at least one of said first portion and said second portion comprising a positioning plate (124), said positioning plate slidably engaged to a guide track (126) to align the connector and the circuit board.

15. (original) A tool in accordance with Claim 10 wherein said first actuator comprises an actuator block (158) comprising a plurality of extraction pins (182).

16. (original) A connector insertion and removal tool (102) for an electrical system (100) including a circuit board (106) and at least one electrical connector (104) therefor, said tool comprising:

TYCO 18060 (AT 20958-2113)

a first portion (110) comprising a first plurality of modular blocks (148, 150, 154, 156, 158), said first plurality of modular blocks comprising a first pair of stationary alignment blocks (148, 150) configured for coupling to a first surface (114) of the circuit board, a first movable actuator block (158) movable toward said circuit board to disengage the connector from the circuit board and movable away from said circuit board to permit engagement of the connector to the circuit board, and at least one first insulative spacer block (154 or 156) to prevent completion of a conductive path through the first portion; and

a second portion (108) comprising a second plurality of modular blocks (or 226, 228, 230, 232, 236), said second plurality of modular blocks comprising at least a second pair of stationary alignment blocks (226, 228) configured for coupling to said first pair of alignment blocks, a second movable actuator (250) movable toward said circuit board to engage the connector to the circuit board and movable away from said circuit board to permit disengagement of the connector from the circuit board, and at least one second insulative spacer block (230 or 232) to prevent completion of a conductive path through the second portion.

17. A tool in accordance with Claim 16 further comprising a pair of guide pins (166), each of said first pair of alignment blocks (148, 150) and said second pair of alignment blocks (226, 228) configured to engage one end of said guide pins.

18. A tool in accordance with Claim 16 further comprising a pair of guide pins (166), each of said first pair of alignment blocks (148, 150) and said second pair of alignment blocks (226), (228) comprising a pair of alignment members (130, 254) extending therethrough and configured to engage a portion of said guide pins.

19. (original) A tool in accordance with Claim 16 wherein said first movable actuator comprises a plurality of extraction pins (182).

TYCO 18060 (AT 20958-2113)

20. (original) A tool in accordance with Claim 16 further comprising a pair of guide pins (166) connecting said first portion and said second portion, each of said guide pins having a first ends having a first threaded portion (170) and a second end having a second threaded portion (280), said first threaded portion being different from said second threaded portion.

21. (original) A tool in accordance with claim 20 wherein a portion of said first threaded portion (170) is removed, thereby preventing threads of said first threaded portion (280) from engaging a complementary threaded alignment member.